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Linus Pauling--is Vitamin C the cure for cancer?

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PAULING) PAULING)

By tsmith (/aetiology) on April 10, 2006.

(/aetiology)

So, Linus Pauling (http://scienceblogs.com/seed/2006/04/science_marches_on_over_linus.php) is apparently the hot topic of the day. Janet's already discussed a bit about the whole "wacky older scientist" phenomenon over at Adventures in Ethics and Science

(http://scienceblogs.com/ethicsandscience/2006/04/linus_pauling_reconsidered.php), while the first post cited gives you a bit of the background of Linus Pauling, bringing in two

(http://www.pubmedcentral.gov/articlerender.fcgi?tool=pubmed&pubmedid=16157892) new studies (http://www.cmaj.ca/cgi/content/abstract/174/7/937) on the topic of vitamin C as a treatment for cancer. Since Janet's covered a bit more of the philosophy and sociology of the topic, I just thought I'd weigh in a bit on the science of the issue, particularly since Lee makes it seem as if Pauling has been unfairly maligned.

Here's what Lee claims happened to Pauling:

In essence, he challenged the established notions of nutrition, particularly regarding vitamin C.

Well, not really. It's much more than that, as he notes later:

Consequently, he proposed that "megadoses" of vitamin C could effectively treat several illnesses, most notably cancer and the common cold, and published a few books to popularize these ideas. In 1973, he formed the Linus Pauling Institute of Medicine, where he performed multiple experiments to verify his claims.

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Books to "popularize" his ideas, before they were accepted by the mainstream scientific community. Sound familiar? His own Institute, where he performed experiments (hey, performing any experiments puts him a step above the Discovery Institute, at least). Now, I don't really think Pauling was as bad as the hacks as the DI, but I do think he was guilty of over-selling his own results, particularly when others were failing to replicate them. This is really where the trouble starts starts--when others couldn't replicate the results, and Pauling and his supporters remained adamant.

Lee notes:

It's curious - if Pauling's original experiment (http://profiles.nlm.nih.gov/MM/B/B/K/Z/_mmbbkz.pdf) demonstrating vitamin C's anti-cancer effects was based on both oral and intravenous vitamin C supplementation, why did the subsequent studies attempting to "replicate" his findings forego testing both routes? When they couldn't replicate Pauling's results, why wasn't their methodology challenged? It seems increasingly plausible that if anyone had bothered to notice and correct these fundamental oversights, Pauling's reputation would have been redeemed and a potentially valuable cancer therapy might have gained mainstream acceptance much sooner.

I don't know much about the studies carried out right after the original 1976 Pauling paper that Lee links, but let's discuss the methods in Pauling's own paper first. According to the methods, patients received vitamin C intravenously for only 10 days, then "orally thereafter." So the IV portion was but a small component of the study, which lasted for as long as a year or more. Most of this time the patients were on oral "megadoses;" so is it surprising that most future research in this area concentrated on this method of delivery? And if the method of delivery was known to be so important, why didn't Pauling or one of his researchers point that out to the folks working on the larger studies? Seems like a bit of ad hoc reasoning to me.

And have no doubt--this has been an incredibly active area of study. Doing a PubMed search using the key words "vitamin C cancer" brings up 2651 items (399 reviews alone). Even adding "intravenous" to that still brings up 41 papers, including 4 reviews. "Vitamin C and intravenous" alone (without necessarily including cancer) brings up 480 papers, including some which seem to involve cancer but were missed in the first search. It's not as if research into this topic stopped with Pauling 30 years ago, and has suddenly been re-discovered.

Additionally, the new studies cited are intriguing, but not exactly groundbreaking. The PNAS study cited (http://www.pubmedcentral.gov/articlerender.fcgi?tool=pubmed&pubmedid=16157892) is an interesting *in vitro* study that certainly may have clinical applications, and if it works, great. Several pilot studies have already been published showing it's fairly safe for humans at the therapeutic levels needed to kill tumor cells, and larger studies examining efficacy will likely follow. (The other study cited is a case report of 3 cancer patients who improved after receiving IV vitamin C--an interesting observation, but as noted in the commentary, (http://www.cmaj.ca/cgi/content/full/174/7/956) " these are only 3 individual cases of very different types of cancer,

(http://www.cmaj.ca/cgi/content/full/174/7/956) " these are only 3 individual cases of very different types of cancer and in each case there is a possible alternative explanation for the positive outcome." Doesn't mean the findings are meaningless, but just that like many preliminary findings, they should be taken with a grain of salt until larger studies confirm the results.

And this brings me back to Pauling. Indeed, his work in this field is often synonymous with quackery, or a tale of caution when it comes to knowing where your expertise lies--and where it doesn't. Does that mean he could still be right--and megadoses of vitamin C could be beneficial? Sure. It's also unfortunate that snake oil salesman such as Matthias Rath (http://quackfiles.blogspot.com/2005/05/aids-activists-go-after-vitamin.html), who was affiliated with the Linus Pauling Institute, continue to trade on Dr. Pauling's name (http://www.heart-disease-bypass-surgery.com/data/footnotes/f15.htm). So while all this is unfortunate, what I see here is a bit more like the mythology of Barry Marshall's ostracism (http://www.chsourcebook.com/articles/hpylori.html)--complete now with the potential happy ending of Pauling's "vindication." Again--call me closed-minded, but I'll wait for the evidence.

Tags: Cancer epidemiology (/tag/cancer-epidemiology) Skepticism (/tag/skepticism)

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Gather 'round, dear readers, and let me regale you with the sad saga of the late, great Linus Pauling. On second thought, calling it "sad" might be a bit excessive. Pauling was the only person to win two individual Nobels, after all (one for chemistry, one for Bysheyd is golderland before studies than meets the eye (/insolence/2006/04/11/by-seed-prodded-or-theres-les-1)

OK, I've been prodded enough! Yes, I've been aware of the study purporting to present good anecdotal case reports showing that there might be something to the hypothesis that megadoses of vitamin C can cure cancer where other therapies fail. I've also been aware of an in vitro study that suggested...

Stochastic, the Seed Blog has an interesting post this morning about Linus Pauling's "golden years" as a scientist. It's a good read, to which I only have a few thoughts to add. First, to bring you up to speed on the story, here's an excerpt from the Stochastic post:

[Haaling] Gambeardeat Has Linus Pauling been vindicated? (/insolence/2009/02/18/vitamin-c-and-cancer-has-linus-pauling-b)

Unfortunately, as we have been dreading for the last four months or so since her relapse was diagnosed, my mother-in-law passed away from breast cancer in hospice. She died peacefully, with my wife and the rest of her family at her side. As you might expect, I do not much feel like blogging, and...



Man, I hate it when those messy facts get in the way of a good story...

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By j-Dog (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820641)



Tara writes:

So the IV portion was but a small component of the study, which lasted for or more.

I think you are missing something in the last bit of that sentence

On a personal note, I met Pauling once (at an anti-nuclear weapons talk he was giving). He was an earnest, sincere and charming individual who cared passionately about what he did. I got his autograph...the only autograph I have.

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By Dave S. (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820642)



Oops. Should have read "which lasted for as long as a year or more."

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By tsmith (/aetiology) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820643)



Missing the forest.....

First, Linus Pauling was a great scientist and a great American.

Very, very, very simple concept.

More by this author

Movin'... (/aetiology/2017/10/18/movin)

October 18, 2017

As several others have already noted, after almost 12 years, Scienceblogs is shutting down at month's end. Though I've done most of my writing elsewhere over the last few years, I'd certainly like to keep the archives of this blog up somewhere, and maintain it as a place to post random musings that...

The high cost of academic reimbursement (/aetiology/2017/09/29/the-high-cost-of-academic-reimbursement)

September 29, 2017

Spring, 2004. I was in the second year of my post-doc, with kids ages 4 and 2. Because I was no longer a student, the full brunt of my student loan payments had hit me, which were collectively almost double the cost of my mortgage. To put it generously, money was tight. Truthfully, we were broke as...

Vaccine advocacy 101 (/aetiology/2017/07/26/vaccine-advocacy-101)

July 26, 2017

I recently finished a 2-year stint as an American Society for Microbiology Distinguished Lecturer. It's an excellent program--ASM pays all travel expenses for lecturers, who speak at ASM Branch meetings throughout the country. I was able to attend Branch meetings from California and Washington in...

Is there such a thing as an "evolution-proof" drug? (part the third) (/aetiology/2017/05/31/is-there-such-a-thing-as-an-evolution-proof-drug-part-the-third)

May 31, 2017

A claim that scientists need to quit making: I've written

For DECADES, scientists have been trying to induce a person's immune system to fight cancer. Even the FDA (http://www.fda.gov/fdac/features/2004/504_cancer.html) acknowledges this.

So, the working hypothesis is, basically: Strong immune system => less cancer.

So, Dr. Pauling asked a simple, simple question, Does Vitamin C boost your immune system or not?

Some folks say Hell Yes. (http://allergies.about.com/cs/vitaminc/a/blaaaai030703b.htm)

I'm sure a lotta folks say, No.

But, Dr. Pauling was pilloried because he challenged the medical establishment. If simply boosting one's immune system is the best way to thwart cancer, it certainly makes, professional cancer researchers (a powerfully connected lobby) look pretty stupid.

I have no idea whether Dr. Pauling will be vindicated or not. The recent PNAS paper discusses Vitamin C's direct killing of cancer cells *in vitro*, so, that's an entirely different mechanism. Frankly, I'm skeptical about this.

But, efforts to utilize the immune system to fight cancer are well documented in the scientific literature.

Hank Barnes

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By Hank Barnes (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820644)



I must agree that we need to wait for more research that confirms the findings. While I understand the concept strong immune system ==> less cancer as Hank said which makes sense, but I don't think its that simple. Cancer is caused by fast growing "abnormal" cells so isn't it possible that strengthening the body could strenghten the cancer? Which is why I understood that scientists were excited about the new drugs that starved the cancer cells while not hurting the healthy cells. Which would make more sense than feeding the cancer high potency vitamins.

I think antioxidant therapy used prior to developing cancer has more promise than curing it. Protecting from free radicles preventing the mutations.

Not to mention isn't vitamin C water soluable so mega doses are of little benefit anyways.

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By Laura (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820645)



Pauling also rejected quasicrystals when they were first studied in the 1980s; he wasn't able to get loose of his old paradigm and see that an entirely new thing had showed up.

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By substitute (not verified) (http://substitute.livejournal.com/) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820646)



Tara,

Thanks much for the trackback and your insightful contributions to the discussion.

I can see how someone would read my post and come to the conclusion that I'm being easy on Pauling or ignoring his own responsibility for what happened.

about these types of claims before. The first one--a claim that antimicrobial peptides were essentially "resistance proof," was proven to be embarrassingly wrong in a laboratory test. Resistance not only evolved, but it evolved...

HIV's "Patient Zero" was exonerated long ago (/aetiology/2016/10/27/patient-zero-was-exonerated-long-ago)

October 27, 2016

The news over the past 24 hours has exclaimed over and over: HIV's Patient Zero Exonerated How scientists proved the wrong man was blamed for bringing HIV to the U.S. Researchers Clear "Patient Zero" from AIDS Origin Story H.I.V. Arrived in the U.S. Long Before 'Patient Zero' Gaetan Dugas: "patient...

Just to make it clear, I do think Pauling overplayed his hand and foolishly made sweeping claims that he didn't have the data to back up, and for that he deserves some derision.

Do I think Pauling was unfairly maligned? To some degree, yes. Some of the criticism he endured seems needlessly personal or entirely misplaced. His detractors didn't just attack his reasoning they also attacked his character, accusing him of deceit and deliberately damaging the health of untold numbers of people with his claims.

Of equal (if not greater) importance is the question whether the idea (separated from the man) was unfairly maligned. Yes, snake oil salesmen have unfortunately latched on to vitamin C megadoses as profitable scams - but should we hold the concept itself guilty by association?

Allow me to play devil's advocate here: Just because the lunatic fringe champions an idea doesn't mean that idea isn't worth serious, objective examination.

Ultimately, though my post mentioned science's "fallibility," I do believe this story ultimately shows science's self-policing as one of its greatest strengths. It's a testament to tenacious curiosity that the follow-up studies that could vindicate vitamin C (if not Pauling) were performed at all.

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By Lee Billings (not verified) (http://www.scienceblogs.com/seed) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820647)



For DECADES, scientists have been trying to induce a person's immune system to fight cancer. Even the FDA acknowledges this.

Of course, the recent clinical trial in Britain in which six subject nearly died from cytokine storm after administration of a monoclonal antibody amply shows the perils of inducing a person's immune system.

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By Orac (not verified) (http://scienceblogs.com/insolence) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820648)



Natural Killer T-Cells, if I may add, have a lot better prospects of treating cancer and they have shown actual promise in clinical trials. The only problem is in understanding how they actually work and how to get them to target the cancer efficiently.

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By Joseph O'Donnell (not verified) (http://immunoblogging.blogspot.com) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820649)



(/user/0)

Orac & J'OD,

You geniuses have good points, but are missing the big picture.

If Vitamin C "boosts" (whatever that means) a person's immune system, and if, a "boosted" immune system is a plausible means of preventing and/or fighting off cancer, then Pauling should not have been pilloried as he was.

BTW Orac, yeah I'm familiar with that clinical trial -- were those AIDS drugs by any chance? Hank B

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By Hank Barnes (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820650)



Not that I'm aware of.

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By Orac (not verified) (http://scienceblogs.com/insolence) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820651)



Lee Billings said: " His detractors didn't just attack his reasoning - they also attacked his character, accusing him of deceit and deliberately damaging the health of untold numbers of people with his claims."

As Tara says: "Sound familiar"?

Anecdotal John says: I've been taking 1500 to 3000 mg of Vitamin C daily for a number of years. At 52, I live in a busy household of many people who are often with colds or flu. I *never* get sick. I'm the only one here who can make the claim. I'm the only one here taking the "C". Of course, with my luck I'll be stricken with cancer later this year! Does the C really keep me healthy or is it some other reason? Who knows? I'll keep taking it though.

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By John (not verified) (http://evolutionarymiddleman.blogspot.com/) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820652)



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Hank wrote: BTW Orac, yeah I'm familiar with that clinical trial -- were those AIDS drugs by any chance? No, they were cancer drugs. (In part: apparently for leukaemia & arthritis)

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By windy (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820653)



(/user/0)

I'm familiar with that clinical trial -- were those AIDS drugs by any chance?

Not that familiar, then:)

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By outeast (not verified) on 10 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820654)



The New Scientist news service 17. March:

A catastrophic over-stimulation of the immune system may have caused the horrific reactions suffered by six men taking part in the first human clinical trial of an experimental drug.

Hank:

If Vitamin C "boosts" (whatever that means) a person's immune system, and if, a "boosted" immune system is a plausible means of preventing and/or fighting off cancer, then Pauling should not have been pilloried as he was.

Pauling shouldn't be pilloried, but the London researchers trying to boost the immune system should? (Oh, yeah, because they made a mistake, they must be pharma shills, although they were trying to accomplish the same thing.)

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By windy (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820655)



This whole view of an immune system as boosted or depressed is simplistic and unhelpful. The immune system has many components which act in many ways, additively, synergistically, and sometimes antogonistically. There is no such thing as a simple "boost" of the immune system. Pauling was pilloried not because of his science, but because of his evangelical treatment of unvalidated data. Even if he ends up being right (of which I am skeptical, but open-minded), he still should be pilloried for trying to perform science in the court of public opinion.

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By Shygetz (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820656)



If simply boosting one's immune system is the best way to thwart cancer, it certainly makes, professional cancer researchers (a powerfully connected lobby) look pretty stupid.

and

But, efforts to utilize the immune system to fight cancer are well documented in the scientific literature.

And who put those efforts into the scientific literature? Amateur cancer researchers? Professional rodeo clowns?

Also, I didn't know professional cancer researchers were a lobby. Oh, you must have meant Big Pharma (cue evil laugh).

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By Shygetz (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820657)



(/user/0)

Lee, I think we mostly agree--it was just that your story touches on the kind of hero worship employed by many in the "fringe" sciences. Duesberg and AIDS, Debmski and Behe in ID, Pauling in vitamin research: big bad "establishment" science versus the maligned little guy. It's a nice story, but rarely is it that black and white.

> Allow me to play devil's advocate here: Just because the lunatic fringe champions an idea doesn't mean that idea isn't worth serious, objective examination.

Oh, I certainly agree, and I've not suggested that an idea should be ignored just because a quack supports it. But it seems some folks take the opposite approach: if it's maligned, it must be right--"the establishment" (or "big pharma," depending on who's the Big Guy in the scenario) must be hiding something.

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By tsmith (/aetiology) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820658)



(/aetiology)

Windy: "..they must be pharma shills.."

Shygetz: ".. Oh, you must have meant Big Pharma (cue evil laugh)."

Tara: "(or "big pharma," depending on who's the Big Guy in the scenario)."

Funny, I didn't mention Big Pharma at all, and it was Orac who brought up the botched clinical trials.

I thought we were talking about cancer and the immune response.

Project much?:)

Hank Barnes

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By Hank Barnes (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820659)



Hank--why does every comment have to involve you or your opinions? Indeed we're talking about cancer, but we're also talking about Pauling and whether he's been "unfairly maligned," as I mentioned in the first paragraph.

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By tsmith (/aetiology) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820660)



In the article by the BBC:

Researchers were unable to explain what caused the results, although they did note the treatment led to the formation of hydrogen peroxide, a chemical known to be toxic to cells.

They noted the vitamin C led to hydrogen peroxide which is toxic to cells. Couldn't this be responsible for the toxic affects on cancer and not an improved immune response? If this is the case could it be toxic to healthy cells too? Any thoughts?

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By Laura (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820661)



Well, you guys are the ones yapping about "Big Pharma,"

Also, when you lump together "Duesberg and AIDS, Debmski (sic) and Behe in ID, Pauling in vitamin research:" you exhibit the worst of the conformist, herd mentality that hinders science.

Each of these are different dynamics, to wit:

- 1. The IDers have a problem with doing experiments and falsifying their own hypothesis. But they have plenty of lay \$\$ and lay support, probably from Christian right via the Discovery Institute.
- 2. Pauling was a great scientist, but no saint. Yes, he won 2 Nobel Prizes, but much of his Vitamin C research was funded by Hoffman-La Roche -- surprise, surprise, the makers of Vitmain C. His central thesis, though, that the immune system can fight cancer, remains an active area of research.
- 3. Duesberg is a differnt animal. He's published over 200 papers in the literature (http://scholar.google.com/scholar?q=Duesberg+PH&ie=UTF-8&oe=UTF-8&hl=en&btnG=Search) over the past 40 years, including Nature, Cancer Research, PNAS, Journal of Virology. If you added up the productivity of **all** the scientists here at ScienceBlogs, you'd probably not even reach 1/10 of Duesberg's productivity.

It just boggles my mind to see all these scientific ankle-biters and Liliputians carp and nitpick at Duesberg's immense body of remarkable work.

The reason Duesberg is maligned, is simply because he has debunked all these B.S. theories, starting with the oncongene (his own pet theory) and ending with AIDS. It's that simple. Professional envy and job security fuels the attack on Duesberg. Not the science.

Hank B

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By Hank Barnes (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820662)



Given that cancer cell lines are not always very good models for actual tumors, it will be interesting to see if any of this translates into an effective treatment.

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By Dale (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820663)



If you added up the productivity of all the scientists here at ScienceBlogs, you'd probably not even reach 1/10 of Duesberg's productivity...Professional envy and job security fuels the attack on Duesberg. Not the science.

Totally laughable, Hank. Quality wins over quantity, I'm afraid.

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By tsmith (/aetiology) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820664)



Tara wrote: Totally laughable, Hank. Quality wins over quantity, I'm afraid

It does -- he has both quality and quantity over you.

Thus, we see, the ridiculous double standard: According to Tara, publishing in nearly every major peer-reviewed, scientific journal, is somehow a *bad* thing.

When bashing ID:

You guys don't publish anything!

When bashing Duesberg:

Er, umm, unspecified quality over quantity!

Are you really suggesting that you've critiqued Duesberg's papers, wrote letters to the journals, pointing out errors, wrote published papers rebutting his scientific arguments?

Considering that you were like 9 years old, when he was elected into the National Academy of Science, (http://www.nasonline.org/site/PageServer) Why do I somehow doubt this?:)

You go, Strep girl!!!:)

Hank Barnes

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By Hank Barnes (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820665)



Hank, I've not claimed any of that. But I and others have, I'll point out again, showed serious problems with some of Duesberg's science. I'd prefer to end my career with, say, 60 good papers, rather than 100 good papers and 100 that are garbage. Now can we get back to Pauling, please?

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By tsmith (/aetiology) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820666)



Hank Barnes, by your logic, Behe and Dembski are also great scientists - they have certainly published a lot of papers in the literature (http://scholar.google.com/scholar? num=100&hl=en&lr=&newwindow=1&safe=off&q=%28Behe+M%29+OR+%28Dembski%29&btnG=Search), some of it undoubtly of very high quality.

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By Kristjan Wager (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820667)



Pauling is another good examples why past research/articles can't be used to vouch for the quality of later research/articles. He undoubtly deserved his Nobel Prize in chemistry, yet his later work was not only bad science, but might even have been harmful.

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By Kristjan Wager (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820668)



Wagner,

Perhaps you can't read too well. Duesberg has published in the *peer-reviewed* literature, eg, Nature, PNAS, Science, Cancer Research, Journal of Virology, etc.

Dembski and Behe have not.

Tara,

But I and others have, I'll point out again, showed serious problems with some of Duesberg's science.

Where? The O'Brien paper you cling too?

Let me make this one specific claim:

- 1. There is NO REBUTAL to Duesberg's seminal paper in Cancer Research. (http://cancerres.aacrjournals.org/cgi/content/abstract/47/5/1199)
- 2. There is NO REBUTTAL to Duesberg's seminal paper in PNAS (http://www.pnas.org/cgi/reprint/86/3/755.pdf)(even though the editor promised one was forthcoming.)

I quote:

"This paper, which reflects the authors views on the causes of AIDS, will be followed in a future issue by a paper presenting a different view on the subject."

(Duesberg, PNAS pg 755.)

Too bad the paper never came, right?

I'd prefer to end my career with, say, 60 good papers, than 100 good papers and 100 that are garbage

My God, Straw man writ large. But, how ya gonna squeeze 60 good papers out of strep throat, anyhow?:)

Hank "Back to Pauling" Barnes

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By Hank Barnes (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820669)



Hank,

You refuse to drop Duesberg can you provide studies done by other scientists that support his cancer theories?

Second I believe that Pauling may not have gotten enough credit and maybe we will learn that vitamin C does play a role but until it can be reliably produced it will be hard to prove. Again I mentioned that high doses of intravenous vitamin C produced hydrogen peroxide. Could that be what caused the cancer cells to die?

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By Laura (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820670)



"Dembski and Behe have not"

Nonse, both Behe and Dembski have been published in respeactable peer-reviewed literature. Just not since they started pendling their ID crap.

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By Kristjan Wager (not verified) on 11 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820671)



Kristjan writes:

Nonse, both Behe and Dembski have been published in respeatable peer-reviewed literature. Just not since they started pendling their ID crap.

With regards to Behe and Snoke, 2004

(http://www.proteinscience.org/cgi/content/abstract/ps.04802904v1), Behe asserts that this is published research involving ID. Even though ID or irreducible complexity is not mentioned in the article, Behe contended (at the Kitzmiller trial) that this study, which looked at ligand binding sites, was an example of the kind of scientific support in favour of IC and ID.

Mr. Rothschild: And there are zero articles in peer-reviewed scientific journals arguing for the irreducible complexity of complex molecular systems?

Dr. Behe: There are none that use that phrase, but as I indicated in my direct testimony, that I regard my paper with Professor David Snoke as to be arguing for the irreducible complexity of things such as complex protein binding sites.

Funny part is, with the release of Evolution of Hormone-Receptor Complexity by Molecular Exploitation (http://www.sciencemag.org/cgi/content/abstract/312/5770/97) by Bridgham, Carroll and Thornton which lays out the evolutionary pathway of just such a system, Behe has had to backtrack and is now claiming that of course such systems are now *not* IC.

Just another example of the amazing morphing ability of ID definitions. They mean exactly what the IDists feel like they mean, which may or may not change on any given day.

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By Dave S. (not verified) on 12 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820672)



When I have a cold, I'll try anything. I'm miserable. So sue me. My Dad swears that taking vitamin C pills works, so I tried them. For me, they worked no better than placebo, or not all. Drinking orange juice seems to do more harm than good (probably added sugar). Eating oranges does no good. But a whole grapefruit is another thing. For me, they work - a little. What is it in grapefruit that works? Who knows? Maybe it's vitamin C. Maybe it's something else. Maybe it only has this effect for me. Maybe on those occasions that I've tried it, I was going to get better anyway. Maybe they really do need to come out with double strength placebo pills, after all.

Now, one person is not a clinical trial. For example, caffeine gives me arthritis, and aspartame gives me nasty headaches. That doesn't mean that others will have the same symptoms I have. Maybe Pauling found some people who respond well to vitamin C.

By the way. While I used to get colds every winter, I didn't get a cold this season, though I had plenty of early symptoms. My secrets: get plenty of sleep, drink a gallon of water every day (you can drink more if it is room temperature), eat a whole grapefruit, use your best dental hygiene (floss, mouthwash, brush - after every meal and snack), avoid sugar, keep yourself warm - especially your neck - for example, wear a hooded sweatshirt to bed. It has been valuable to me to figure out what works for me. There's a survival advantage to having a brain, but only if the animal uses it.

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By Stephen Uitti (not verified) (http://predelusional.blogspot.com/) on 12 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820673)



Stephen,

You have more good sense then many of these folks combined!

Maybe Pauling found some people who respond well to vitamin C.

Yeah, himself! Eventually he died from prostate cancer at age 93, but for years he attributed his own good health to massive doses of Vitamin C, and then he nudged, cajoled, and strong-armed many of friends and colleagues to do the same. And then he really upped the ante by pulling his scientific rank, by publishing, researching and obtaining funding for the cause.

My secrets: get plenty of sleep, drink a gallon of water every day (you can drink more if it is room temperature), eat a whole grapefruit, use your best dental hygiene (floss, mouthwash, brush - after every meal and snack), avoid sugar, keep yourself warm - especially your neck - for example, wear a hooded sweatshirt to bed.

Shh! Be careful or you'll be derided as an Altie (http://scienceblogs.com/insolence/2006/02/what_is_an_altie_2006_edition.php) by this group:) Regards, Hank

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By Hank Barnes (not verified) on 12 Apr 2006 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820674)



I can't believe it, my co-worker just bought a car for \$77308. Isn't that crazy!

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By Betsy Markum (not verified) on 23 May 2006 #permalink

to massive doses of Vitamin C.."

(https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820675)



"..Eventually he died from prostate cancer at age 93, but for years he attributed his own good health

While we would never know whether it was the Vitamin C that let Pauling lived to the age of 93, surviving prostate cancer until 93 is a feat itself. Many people die of the cancer at half of his age with all our modern advanced medicine at disposal. If Pauling claimed that it is due to the Vitamin C, I would not so easily discount it.

The insinuation that Pauling's Institute is funded by LaRoche Drug company is rather stupid. I mean Vitamin C is so cheap and abundant, what would Pauling have to gain by peddling this cheap vitamin? Literally hundreds of companies sell it in bulk, as if Pauling has a patent on Vitamin C? Remember, he devoted a substantial part of his life for world-peace. To me, that says more of his character than some PhDs that is trying to pump out as many research paper as possible so that he can end up with a tenure position at some prestigious university (or settle for even less prestigious ones).

I think Pauling was genuinely interested in bettering the human kind with the talents he has. I don't think he would purposely harm people - and the fact remains - I've never heard anyone died of overdosing on Vitamin C - I'm sure you can find isolated cases, just as the case someone died from drinking too much water. The point is, Vitamin C is essential to humans and we don't produce it.

30 years ago, if a patient told a doctor he was taking 3000 mg of Vitamin C, most doctors would tell him that will kill him. Today, most doctors will NOT discourage you from taking Vitamin C.

The point is, most people here (or those who oppose Pauling) have no better knowledge of Vitamin C than Pauling. In the end, whom am I going to believe? A Nobel Laureate chemist, or someone who is trying to take pot shots at him (to feel more self-important?). I'll take my Vitamin C's, thank you, and take my chances that it is beneficial.

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By claisen (not verified) on 28 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820676)



there is another cancer hypothesis, the "trophoblast" hypothesis by a Dr. beard a hundered years ago that makes some sense, considering the war on cancer has been a total failure, and the best treatment is to be put in a human microwave that kills all your cells, maybe its time to explore other hypothesis since so many are dying.

also, i dont know much about chemotherapy, so I was wondering if someone could link me to the original studies that showed patients with the same stage cancers given chemo survived longer than those who didnt. I hope those papers exist.

The trophoblast theory states that eating b17 and taking pancreatic enzymes can help with cancer, i know there are studies debunking this but they seemed flawed, the patients were in late stage cancer where no treatment would have helped, including chemo. The video is "a world without cancer"

http://video.google.com/videoplay?docid=4312930190281243507 (http://video.google.com/videoplay?docid=4312930190281243507)

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By cooler (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820677)



Animal studies show that treatment with b17/pancreatic enzymes is very helpful, I wonder what Dr. maniotis, a cancer specialist would think after seeing this video, i hope he still reads these blogs and can give his opinion.

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By cooler (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820678)



Different cancers have different natural histories, different treatments, and different causes. For which particular cancer and which particular chemotherapy did you want the survival analyses, cooler? And for what cancer is laetrile helpful?

Also, what inspired you to dig up a post from a year and half ago and comment?

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By jen_m (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820679)



Im not the one that brought it back, someone up top did, then I became aware of it when i saw it in the recent comment section.

What is with you? What difference does it make anyways? I just came across the trophoblast theory of cancer and thought i would share it, thats why i posted. Especially would wonder what cancer experts like Maniotis and duesberg would think of it.

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By cooler (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820680)



"Claisin" up above is the one that brought this thread back from the dead, and why not, its an interesting topic, who cares anyways, jen m, why dont you interrogate him and ask him......

"Also, what inspired you to dig up a post from a year and half ago and comment?"

Maybe you can be on 60 minutes or 20/20 for uncovering this massive connspiracy of "deniers" bringing back threads from the dead! Go for it!

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By cooler (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820681)



Right you are, cooler. Sorry about that. I can see the relevance of claisen's comment on Vitamin C, and I can see how we got from there to trophoblasts. Here, I'll make it up to you by providing something written about that theory as an alternative to the video:

http://www.cancure.org/science_paper1.htm (http://www.cancure.org/science_paper1.htm)

(Not everyone can access video.)

All right. So, back to the questions about cancer - I am not sure whether you will get any comment at all from Dr. Duesberg, but Dr. Maniotis will probably have something to say. About chemo survival studies - the answer is going to depend on the particular cancer.

I try hard to be respectful, cooler, but sometimes I'm impatient. I know you understand.

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By jen_m (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820682)



(/user/0)

"I try hard to be respectful, cooler, but sometimes I'm impatient. I know you understand."

You are respectful, that is true and that is commendable on this site. You get a "get-out-of-shit-free-card"... from me at least.

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By pat (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820683)



Thank you, Pat!

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By jen_m (not verified) on 29 Nov 2007 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820684)



(/user/0)

People: I call you people, you alone, know what you are! Why don't you try the Patent Office, where the Pauling/Rath, Patents were issued from and quit all this b.s. about whether or not the studies on the cure for Cancer were proven??

Again, since Chemotherapy has a 3% survival rating, you really should go back to grade one, instead of crying the blues, over whether or not Pauling's "theories" have been effective?

I was under the impression that the US Patent Office, would not issue any patent, unless the theory was "shown" to be effective!!!

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By Ray Parker, CD (not verified) on 04 Apr 2008 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820685)



Someone, PLEASE tell me, why the local drugstore, has Vitamin C

"concoctions", for the common cold ~ since you "geniuses (genii?), seem to think Vitamin C does not work, ehhh???? I have some Ocean-front property, I'll sell, real cheap, just south of the Manitoba border, for you!!

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By Ray Parker (not verified) on 05 Apr 2008 #permalink

(https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820686)



More of my "obfuscations": Sure, sure, I know, Linus is on John Renner's "quacklist", but so is Stanislaw Burzinski (anti-neoplastons). He WON, big time, against the FDA, why not re-quote, What Doctor Rath said, about I.G. Farben ~ ahem, excuse me, I mean, I.G. Auschwitz????

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By Ray Parker, CD (not verified) on 05 Apr 2008 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820687)



Many people die of the cancer at half of his age with all our modern advanced medicine at disposal.

Look at it a little closer. Those who die of prostate cancer at half of his age are, without exception, the guys who went for the "modern advanced medicine" in the first place. MAM fear for cancer indoctrination + MAM hospital treatment (read torture) = fatal.

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By jspreen (not verified) (http://www.nightsofarmour.com) on 05 Apr 2008 #permalink (https://scienceblogs.com/aetiology/2006/04/10/stochastic-on-linus-pauling#comment-1820688)



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Today we'll look at an alternate version of the gravitational potential that's truly screwy: The first thing to notice is that it's not finite as r becomes very large. Among other things, that means there's no such thing as an escape velocity in a universe with this kind of...

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(/startswithabang/2013/07/22/messier-monday-a-galactic-sliver-in-the-big-dipper-m108)

"Most writers spend their lives standing a little apart from the crowd, watching and

listening and hoping to catch that tiny hint of despair, that sliver of malice, that makes them think, 'Aha, here is the story.'" -Ayelet Waldman Welcome back again to another Messier Monday, where we're all set to take an in-depth look at one of the 110 deep-sky wonders that make up the Messier catalogue....

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